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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,637	11/13/2003	Lapthe Chau Flora	ITDE-PNV110US	8980
23122	7590	10/22/2004	EXAMINER	
RATNERPRESTIA P O BOX 980 VALLEY FORGE, PA 19482-0980			NGUYEN, THONG Q	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/393,721

Applicant(s)

NAKATA, TATSUO

Examiner

Thong Q Nguyen

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 3-9, 14 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 10-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 March 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/25/03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species I as shown in figure 1 in the reply filed on 8/10/2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

It is noted that in the Election, applicant has stated that the claims readable from the elected Species I are claims 1-2 and 7-13. The Examiner respectfully disagrees with the applicant and respectfully invited the applicant to review the specification, in particular, in page 14. In other words, the use of a (first) optical system having an incoherent light source is directed to the second embodiment which shown in figure 3. In the light of such teaching in the present specification then claims 7 and its dependent claims 8-9 are grouped/read from the second embodiment shown in figure 3 which is not elected by the applicant.

As a result, the claims readable from the elected Species (I), figure 1, are claims 1-2 and 10-13.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 3/27/2002. It is noted, however, that applicant has not filed a certified copy of the foreign application as required by 35 U.S.C. 119(b).

Drawings

3. The drawings contain three sheets of figures 1-5 were received on 6/25/2003.

These drawings are objected by the Examiner for the following reason(s) .

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: The numerical reference "204" as shown in figures 1 and 3 and the numerical references "318" and "320" shown in figure 3 are not mentioned in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-2 and 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 1 is indefinite because it is unclear about the mete and bound of the subject claimed in the feature thereof "a particular phenomenon" caused by the combination of two laser beams from two laser sources on a sample.

b) Claim 12 is rejected under 35 USC 112, second paragraph for the similar reason as set forth in element a) above. Further, the feature "the surface" (line 11) lacks a proper antecedent basis. In particular, it is unclear which component has the so-called "the surface" as claimed.

c) Claim 13 is rejected under 35 USC 112, second paragraph for the similar reasons as set forth in element b) above.

d) The remaining claims are dependent upon the rejected base claim and thus inherit the deficiency thereof.

Claim Objections

8. Claims 2 and 10-11 are objected to because of the following informalities.

Appropriate correction is required.

Art Unit: 2872

- a) In each of claim 2 (line 5) and claim 11 (lines 6-7), the feature thereof "the sample surface" should be changed to --a sample surface-- to avoid the antecedent basis problem of the feature claimed.
- b) In claim 10, the term "IR" (line 3) should be changed to --infrared--.
- c) In each of claims 12-13 (line 5 of each claim), "an light" should be changed to --a light--.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1 and 10, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Kashima et al (U.S. Patent No. 6,094,300).

Kashima et al disclose a confocal microscope. The microscope as described in columns 12-15 and shown in figures 7-9 comprises two illuminating systems. The first illuminating system comprises a light source (100) and optics for guiding light wherein the optics includes a first scanning system (102), relay lens (103), and a reflector (104) arranged in that order from the light source. The second illuminating system comprises a light source (2) and optics for guiding light wherein the optics include an optical adjusting mechanism (20), a second scanning system (4), a relay lens (5) arranged in that order from the light source (2). A dichroic beam splitter (10) is used to combined light from the first and

Art Unit: 2872

second illuminating systems and for guiding light to an object (110) via an imaging lens (106) and an objective lens (107). The optical adjusting mechanism (20) as described in column 13 comprises a fixed lens element (21) and a movable lens element (22) wherein the light emitted from the optical adjustment mechanism (20) has a variable beam diameter and angle based on the movement of the movable lens element (22). Regarding to the type of light used in the system, the light source of the first illuminating system can be an infrared light source for providing an excitation to the sample containing fluorescent agent as can be seen in column 9. It is also noted that the use of a detecting system for detecting the image from the sample is disclosed when Kashima et al disclose the use of a beam splitter (101) for guiding detected light to a detector (115) via the optics including a filter 9112), a lens (113) and a pinhole (114).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 12 and 13, as best as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashima et al (U.S. Patent No. 6,094,300).

The confocal microscope as provided by Kashima et al as described in columns 12-15 and shown in figures 7-9 as described above meets all of the features related to the components of the microscope claimed in the method claims 12-13

except Kashima et al do not clearly set forth a set of steps for observing the image. However, it would have been obvious to one skilled in the art at the time the invention was made to set forth a set of steps including the step of irradiating an excitation light onto a sample contained fluorescent agent by using a first illuminating system having an infrared light source and a scanning system; the step of irradiating a light onto a sample contained fluorescent agent by using a second illuminating system having a laser source and a scanning system; the step of imaging by detecting light from the sample to a detecting system; and the step of varying the diameter of the light beam in the second illuminating system via the movement of the movable lens element in the optical adjustment mechanism positioned in the second illuminating system.

Regarding to the feature that the optical adjustment mechanism is sued to adjust the beam diameter of the excitation light as claimed in claim 12, it is noted that the light of the second illuminating system can be an infrared light source as disclosed in column 9 of the Kashima et al patent. As such, when the light source of the second illuminating system is an infrared light source then the movement of the movable lens element in the optical adjustment mechanism will give a change in light intensity of light on the sample surface along a depth direction of the sample during the scanning process made by the second scanning system (4) and the light from the scanning system (4) irradiates the sample by an excitation light.

Art Unit: 2872

13. Claims 2 and 11, as best as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashima et al in view of Toda et al (U.S. Patent No. 5,675,145).

The confocal microscope having an optical adjustment mechanism for varying the beam diameter and its emission angle as provided by Kashima et al does not have a means for calculation and storing the light intensity distribution along a depth direction of the sample as claimed. However, it is noted that a change in position of the movable lens element (22) is made based on a particular convergent point of light on the sample as disclosed by Kashima et al as can be seen in columns 13-14 and shown in figures 8-9. It is also noted that the use of a detecting system for detecting the light intensity of light provided by a light source and having its beam diameter change by an optical adjustment system is disclosed in the art as can be seen in the microscope provided by Toda et al. In particular, Toda et al discloses a microscope system having a light source (26) an optical adjustment system (28) for varying the beam diameter of the light provided by the light source (26), a probe (12) having an aperture and a detecting system (94) for detecting the light intensity passing through the aperture of the probe. See columns 5 and 7-8 and figure 5. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope provided by Kashima et al by using a detecting system for detecting the light intensity distribution of light passing through a mechanism used for adjusting the beam diameter of a light beam as provided by Toda et al

Art Unit: 2872

for the purpose of detecting the light intensity of light at a particular depth location of a sample.

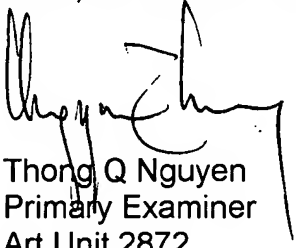
Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q Nguyen whose telephone number is (571) 272-2316. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Thong Q Nguyen
Primary Examiner
Art Unit 2872
